First Experiment.—Study of the older, or updraft, type of brick kiln (Fig. 1), which has the opening for the escape of the waste gases at the highest part of the arched roof.

Small streams of colored kerosene are introduced through the fireboxes and flow up to the central orifice, which is wide open. The streams of kerosene may be seen as fine threads flowing up close to the walls of the kiln and are not of sufficient volume to fill the kiln chamber. Increasing the flow of the kerosene, or, as it may be expressed, firing the kiln more heavily, does not affect the result, It is very clear that the burning of the brick in a

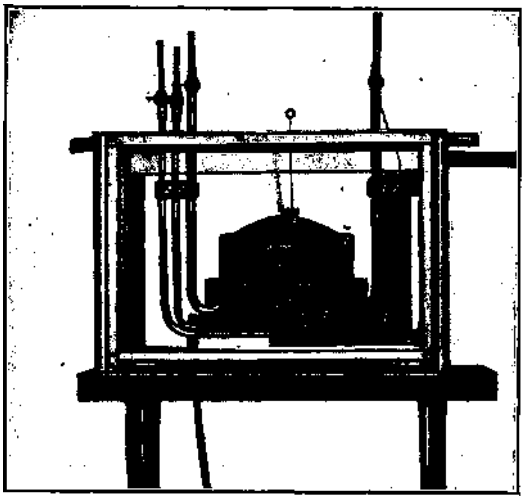

FIG. 1.

kiln working in this manner will be defective. The brick in the lower portion of the kiln will be soft and only partially burned. In order to improve this condition it will be necessary partially to stop up or close the smoke hole. The poor working conditions which exist in the updraft brick kiln are shown in Fig. 1. When the smoke hole is partially closed, the kerosene is forced to accumulate in the upper portion of the kiln; it fills more and more of the

the surface of the water; thence by a trough it flows to the large bottle below. A small pump driven by a motor of -^ hp draws the kerosene from the lower bottle and delivers it to the upper bottle, enabling the kerosene to circulate by gravity as long as desired.